Business-Technology Alignment

Documented Decision to Build, Buy, or Enhance Existing Tools

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Executive Summary

In selecting an enterprise-wide architecture (EA) support and development tool, the FSA CIO IT Management team narrowed their choices to three candidate tools: Ptech Enterprise Framework 6.0; Popkin System Architect 2001; and Rational Rose Enterprise 2002. The tools were gauged in terms of function fit, technical suitability, system requirements, vendor suitability, and cost. Similar efforts by the Department of Education (ED) were reviewed and used in the FSA tool evaluation.

The decision making process involved collecting data, conducting a round table meeting to discuss the findings, following up with present customers of the strongest tool, and a final decision to deploy an EA tool within FSA.

FSA CIO IT Management team members selected Ptech Enterprise Framework as the strongest EA tool they examined. Below are summaries of each area considered:

- *Functional Fit* Ptech was rated as the best fit for the functional requirements identified by the FSA CIO IT Management team. It excelled in Technical Infrastructure Repository and Enterprise Architecture Management capabilities.
- *Technical Suitability* There were only differences in how the tools integrated with other products within FSA. No product emerged with a clear advantage.
- *System Requirements* All candidate tools will run on workstations that meet current FSA standards. Each tool will run within a Microsoft Windows operating systems, while Rational Rose Enterprise will also run within an Unix operating system.
- *Vendor Suitability* All three companies seem stable, but Ptech has an advantage as it is the only vendor whose product line is specifically devoted to the development and support of EA. Popkin and Rational are adding these capabilities to their product line, but their offerings are not as robust as Ptech's.
- *Cost* Rational offers the lowest initial cost as FSA currently holds several unused licenses. The long-term cost for using Rational Rose Enterprise to develop FSA's EA will come in the effort required to produce an EA that business users can reference. Ptech is a more expensive tool than Popkin, but offers functionality that may minimize effort and result in an EA that adds value to FSA. Also, ED is using Ptech's tool, so it may be possible to either use one of their licenses or to negotiate purchasing a license through their existing relationship with Ptech.

A price estimate of $110,000 was attained from Ptech for the delivery of the following:

- 2 Enterprise Framework licenses, the IT Architecture Accelerator, and other necessary software
- Onsite training for up to 12 students
- 421 hours of consulting
- An as-is enterprise architecture of FSA

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Introduction

In an effort to implement an enterprise-wide architecture (EA), Federal Student Aid (FSA) is exploring the adoption of a tool to manage artifacts of its EA. The three tools considered in this document are Ptech's Enterprise Framework 6.0, Popkin's System Architect 2001, and Rational's Rose Enterprise 2002.

Criteria for Decision Making

Several criteria were used to examine each tool. The functional requirements for the support tool were identified from organizational need, external EA requirements, and visioning how the EA can be leveraged in planning future EA designs. The functional requirements are described in the *Support Tool Functional Requirements* document. In addition to the functional requirements, technical suitability, system requirements, customer interviews, vendor suitability, and cost were used to assess which tool offers the greatest return for FSA with minimal risk.

Decision Making Process

Over the course of six weeks, the FSA IT Management team participated in a decision making process to (1) determine whether they would benefit most from buying, building, or enhancing an EA tool, (2) identify candidate tools to purchase, (3) select the specific tool that they would use to develop their EA. The decision making process included the following step:

1. Defining the functional requirements of the EA support tool.
2. Examining the potential products for supporting the EA effort. The examination was based on available literature and a narrowing the field of candidate tools down to those seen as most closely fulfilling the functional requirements.
3. Reviewing the Department of Education's EA tool assessment in conjunction with the previous step to identify three candidate tools.
4. Vendor demonstrations of the three candidate tools were conducted with FSA CIO IT Management team members interacting with vendor representatives.
5. After each vendor demonstration, IT Management team members were surveyed on how well they felt each tool fit each functional requirement. A copy of the survey instrument is attached as Appendix B: Vendor Demonstration Survey Form. The aggregate survey results are included in this document's Functional Fit section.
6. GSA price lists were attained and are presented in the GSA Price Estimates table.
7. System requirements for each candidate tool were identified to confirm that FSA standards compliance would be assured when implementing a tool. The system requirements are described in the System Requirements table.
8. Vendor suitability was assessed and a summary of each vendor is presented in the Vendor Profile table.

9. A round table meeting was held for the FSA CIO IT Management team members to discuss all collected findings and prioritize which tool(s) they would like to investigate further.
10. Ptech's Enterprise Framework emerged from the round table meeting as the preferred tool. Subsequent investigation by the Business Technology Alignment team included collecting commentary from other federal agencies (NASA, US Navy, FBI, and USPS) using Ptech's tool and negotiating a price for licenses, training, and consulting services. FSA team members did budget research to determine a timeline for proceeding with a tool
11. A final round table meeting will be conducted to establish a plan to proceed with a tool.

Functional Fit

Vendor demonstrations were conducted for the FSA CIO IT Management team. The demonstrations served as an opportunity for team members to see the candidate EA support tools and ask specific questions of the vendor representatives. After each demonstration session, FSA team members were surveyed to gauge their opinions regarding how well each of the tools met each of the established functional requirements. Below are the results of the survey. The following rating system was used:

Rating	Score
Fully supports function and includes additional desirable features	4
Supports function	3
Provides limited support of function	2
Does not support function	1

Based on the survey results of questionnaire completed by IT Management team members, Ptech Enterprise Framework emerged as the tool perceived to have the best fit with the functional requirements. It excelled in Technical Infrastructure Repository and Enterprise Architecture Management capabilities. Rational was seen as the most capable tool for Documentation and Reporting, as well as, General functions. Ptech Enterprise Framework provides the best overall fit with the functional requirements.

Consolidated Overview

Requirement Description	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Technical Infrastructure Repository	3.53	3.28	3.40
Enterprise Architecture Management	3.83	3.15	3.40
Documentation and Reporting	3.63	3.23	3.75
General	3.44	3.23	3.61
Total	**3.61**	**3.22**	**3.54**

Technical Infrastructure Repository

Requirement Description	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Provide a data repository to store information of individual technology components including the version level.	4.00	3.60	3.50
Provide for a GUI data entry mechanism to add and maintain information in the data repository	3.67	3.60	3.50
Support standard DBMS file types.	2.33	3.00	3.00
Ability to interface with the configuration management information.	3.67	2.60	3.50
Ability to store architecture elements.	4.00	3.60	3.50
Total	**3.53**	**3.28**	**3.40**

Enterprise Architecture Management

Requirement Description	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Ability to organize individual technology components by business applications.	4.00	3.33	3.00
Web Enable the as-is and to-be architectures.	3.67	3.33	4.00
Ability to navigate through the as-is and to-be diagrams and dynamically drill-down to the business applications.	3.67	3.33	3.50
Ability to navigate through the various models and dynamically drill-down to its technical infrastructure.	3.67	3.60	3.50
Provide links between business applications, project descriptions, and the technology infrastructure components within the architecture.	3.67	3.00	3.50
Provide links between business strategic goals and the applications.	4.00	3.00	3.50
Ability to construct layered architecture representations that include operational, system and technical perspectives.	4.00	2.60	3.50
Ability to follow FSA Technical Standards.	3.67	3.00	3.50
Ability to link the business strategy to the organizational elements.	4.00	3.33	3.00
Ability to link the organizational and investment management strategy to technology initiatives.	4.00	3.00	3.00
Total	**3.83**	**3.15**	**3.40**

Documentation and Reporting

Requirement Description	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Retrieval and display of project documentation.	3.00	3.00	4.00
Provide ability to generate standard reports.	4.00	3.00	4.00
Provide ability to generate ad-hoc 'What-if' reports.	4.00	3.33	3.00
Ability to access and download reports and documents.	3.50	3.60	4.00
Total	**3.63**	**3.23**	**3.75**

General

Requirement Description	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Support standard text file types for content management.	3.50	4.00	3.50
Access as-is and to-be architectures using a web browser.	3.50	3.00	4.00
Login authentication and authorization for maintenance activities.	3.50	3.50	4.00
Ability to provide a web-based user interface.	3.50	3.00	4.00
Ability to provide a graphical user interface.	3.50	3.33	4.00
Ability to import data from other tools or existing models.	3.50	3.66	3.50
Ability to conform to Section 508 Requirements.	3.00	3.00	3.00
Ability to support and monitor element's check-in and checkout.	3.50	2.66	3.50
Ability to control/monitor system security and audit trail.	3.50	3.00	3.00
Total	**3.44**	**3.23**	**3.61**

Technical Suitability

The only differences between the tools' technical suitability for FSA implementation is the integration of the tool with other products currently deployed within FSA. FSA CIO IT Management team members use Microsoft Office tools to product word processing, spreadsheet, presentation, database, and modeling documents. They also use Oracle and DB2 for database management. It is desirable for the EA tool selected to integrate well with these products for the importation and exportation of data, as well as, the management of documents in a repository.

Of the three candidate tools, Ptech's Enterprise Framework has the most robust presentation capabilities, but its reliance on the KnowledgeBase, a proprietary neural network database, limits integration with other data management software used within FSA. Popkin's System Architect interfaces well with databases, and FSA has familiarity with the capabilities and limitations of Rational's products as Rational is currently in use within FSA

Performance & Scalability

FSA's EA needs are not expected to exceed the performance and scalability of any of the three products. With an expected limited installation, the primary use of the EA tool will be for content development and documentation management. With Popkin's and Ptech's tools, the architecture can be exported to HTML which can be referenced through existing web servers.

This means that licenses would only be required for resources actually developing the architecture. It is unclear whether Rational's tool would support such an delivery method.

Integration

Ptech Enterprise Framework 6.0

Strengths:

- APIs for running external programs that read from or populate the KnowledgeBase
- Linking and invocation of external documents and applications from any model element.
- Ability to export content as HTML files.
- HTML hotspot graphic diagrams allows access to underlying data elements through web interface

Challenges:

- Data can only be imported through comma-separated (CVS) text files.

Popkin System Architect 2001

Strengths:

- Ability to synchronize with SQL based database products.
- Can generate HTML of models for users to reference

Challenges:

- Unclear details about integration with Microsoft Office products

Rational Enterprise Suite 2002

Strengths:

- Can interface with the following databases: Oracle, Microsoft SQL Server, IBM DB2, any SQL92 compatible database software, Sybase
- Does round trip editing with .NET, J2EE, and Rational's proprietary XDE.
- Open API

Challenges:

- Third party translators much be purchased for each graphic or data type.

Maintainability

Each of these tools would entail a small installation which should not present maintenance issues. Also, no customer of Ptech interviewed mentioned any maintenance problems.

Architecture Stability

The stability of each tool can be influenced by the development path it traveled. Ptech's tool was designed from the beginning to be an enterprise architecture design and management tool. It was based on industry-wide EA frameworks. Popkin's tool added EA functionality after initial development for system design and data modeling. Frameworks are being added to Popkin's tool in response to customer need and market shifts. Updates are slow though and rapid changes in EA requirements may not be addressed in a timely manner. Rational is not designed as an EA tool and while the product is mature, its EA capabilities are just now being explored by Rational.

Security

There appear to be no known security issues with the candidate tools. Each will be deployed on the FSA intranet and security will be dependent on network security. FSA has implemented Rational products and has experienced no security issues with these specific tools.

System Requirements:

All enterprise architecture tools will run on either Microsoft Windows based operating systems on a PC workstation. Rational Enterprise Suite 2002 will also run on a Unix server allowing users to access the program through X Windows. Other hardware and software requirements are moderate.

System Requirements

	Ptech Enterprise Framework 6.0	Popkin System Architect 2001		Rational Rose Enterprise	
Operating System	Microsoft Windows NT Microsoft Windows 95 Microsoft Windows 98 Microsoft Windows 2000	Microsoft Windows 95 B OSR2 Microsoft Windows 95 A SP1 Microsoft Windows 98	Microsoft Windows NT 4.0 SP3 or higher	Microsoft Windows XP Professional Microsoft Windows NT 4.0 Microsoft Windows ME Microsoft Windows 98 Microsoft Windows 2000	Linux x86 (Red Hat 6.2, 7.0) Sun Solaris 2.5.1 minimum HP-UX 10.20 minimum SGI IRIX 6.5.5 AIX 4.3.2 minimum True64 4.0f
Hardware Platform	PC Compatible	Pentium 233mhz (minimum) Pentium II 300mhz (recommended) Pentium III 450mhz (optimum)	Pentium 233mhz (minimum) Pentium II 300mhz (recommended) Pentium III 450mhz (optimum)	Pentium-based PC Compatible	Server: Midrange Unix server or workstation Client: Any Unix workstation or PC running eXceed 6.1 or higher
Memory	32MB RAM (minimum) 64MB RAM (recommended)	32MB RAM (minimum) 64MB RAM (recommended) 128MB RAM (optimum)	64MB RAM (minimum) 96MB RAM (recommended) 128MB RAM (optimum)	64MB RAM (minimum) 128MB RAM (recommended)	64MB RAM plus 32MB RAM per concurrent user
Display Resolution	1024 x 768	800 X 600 256 color display (minimum) 1024 x 768 16 bit color (recommended) 1024 x 768 16 bit color (optimum)	800 X 600 256 color display (minimum) 1024 x 768 16 bit color (recommended) 1024 x 768 16 bit color (optimum)	SVGA-compatible 256 color display	X Window color display
Hard Drive Space	85MB (minimum) 100MB (recommended)	60MB (minimum 100MB (recommended) 100MB (optimum)	60MB (minimum 100MB (recommended) 100MB (optimum)	200MB	270MB plus 1-3MB per Rose model
Other software requirements	Virtual Basic scripting engine required Java Runtime Environment	Internet Explorer 4.01 SP1 Microsoft Office 97 SP2	Internet Explorer 4.01 SP1 Microsoft Office 97 SP2		

Vendor Suitability

All vendors seem to have characteristics that make them suitable. Ptech is the newest company, but it is also the only company whose focus is specifically on EA development and support tools. Popkin and Rational both are old companies, but did not address EA within their product lines until very recently.

Ptech

Strengths:
- Used in Department of Education for managing their enterprise architecture
- Deployed in many other federal agencies
- Focused product line

Challenges:
- Small privately held company
- In business since 1994

Popkin

Strengths:
- In business since 1985
- Approximately 80,000 licensed seats.
- Incorporating government frameworks into product line

Challenges:
- Slow to update product line
- Small, privately held company

Rational

Strengths:
- Large publicly traded corporation
- FSA has purchased licenses and has available seats.
- Large installed user base

Challenges:
- Does not directly address Enterprise Architecture

Vendor Profile

	Ptech Enterprise Framework 6.0	Popkin System Architect 2001	Rational Rose Enterprise
Date of Demonstration	2/7/2002	2/12/2002	2/19/2002
Type of Company	Privately held	Privately Held	Publicly Traded (NASDAQ: RATL)
Number of Employees	50	100	3700
Established	1994	1986	1981
Installed Licenses	100,000 approximately	80,000 approximately	500,000 approximately
Headquarters	Quincy, MA	New York City, NY Satellites: Herndon, VA; Seattle, WA; Dallas, TX	Cupertino, CA Lexington, MA
Major Federal Government Customers	Department Of Education, CIO Council's Federal Enterprise Architecture Framework (FEAF), IRS, SIRM, House of Representatives, NSA, Forest Service, FBI, NASA, Secret Service, USPS, FAA, HCFA, Customs, DOD, Navy, Air Force	INS, U.S. Army, U.S. Air Force, U.S. Navy, DTRA, DISA/DLA/JECPO, IRS, U.S. Department of Transportation, U.S. Customs, NASA, NIMA, U.S. EPA, U.S. Department of Labor	Executive Office of the President, Department of Housing and Urban Development, Department of Air Force, Administrative Office of the US Courts, Department of Agriculture, CIA, Department of Defense, FDIC, Department of Education, NASA, Department of Commerce, NSA, Department of Labor, Federal Trade Commission, Department of Transportation, General Services Administration, Department of Treasury, US AID, Department of Justice, US Postal Service, Department of the Navy, Department of Health and Human Services, Department of State, Department of Veterans Affairs
Private Sector Customers	ABN-Amro, Aetna, Booz Allen Hamilton, Fleet Securities, IBM Global Services, Motorola, PricewaterhouseCoopers, Sprint	Lockheed Martin, Raytheon, IBM, BAE, Boeing, KPMG, EDS, TRW, General Dynamics, CSC, Booz Allen & Hamilton, Conquest, Inc, AMS	Wells Fargo, Merrill Lynch, Ericsson, Lockheed Martin Canada, Credence, BindView, Choice Hotels International, ThinAirApps
Strategic Alliances		Microsoft, IBM, Computer Science Corporation	BEA Systems, Hewlett-Packard, IBM, Intel, Microsoft, SGI, Sun

Cost

Of the three candidate tools, Rational Rose Enterprise seems to have the lowest initial cost because FSA already has several unused licenses that can be deployed for EA development. The limiting factor is that Rational's products do not directly address EA development and a significant expenditure of effort may be required to product an EA. Popkin is less expensive than Ptech, but due to Ptech's stronger match with the functional requirements, the greater cost associated with Ptech may be offset with minimizing effort and having an EA product that adds greater value to FSA.

The FSA CIO IT Management team members requested the Business Technology Alignment team attain a price estimate from Ptech for an Enterprise Framework starter package to include software, training, consulting, and support. The estimated price is $110,000 for deliver of the following:

- Services to help develop a preliminary As-Is Enterprise Architecture (The mix of labor categories will be 30% Principle Enterprise Architect, 30% Sr. Enterprise Architect, 40% Enterprise Architect for a total # of hours of 421.)
- A suitable, populated ITAA KnowledgeBase.
- A Website on FSA's Intranet with all of the KnowledgeBase exposed
- Other required reports.
- Two copies of Framework* Professional Software, multiuser
- One four-day on-site initial training class targeted on applying the ITAA in the context of the FSA work

FSA may be able to reduce the cost of attaining Ptech by working with ED to either utilize a license they may have that is not being used, or "piggy-backing" on the relationship that ED has with Ptech to buy additional licenses for use with ED's IT Architecture Accelerator.

Below is a table for comparing the basic GSA pricing for each of the three candidate tools.

GSA Price Estimates

	Ptech Enterprise Framework 6.0		Popkin System Architect 2001		Rational Rose Enterprise	
Base price	$29,750 (IT Architecture Accelerator, not necessary if ED's ITAA is used)		None		None	
Cost per names user	***Price***	***Annual Maintenance***	***Price***	***Annual Maintenance***	***Price***	***Annual Maintenance***
1 user	$8,500	$1,275	$2,496	$376	$3,495	$699
3 users	$21,250	$3,188	$7,488	$1,128	$10,485	$2,097
5 users	$29,750	$4,463	$12,480	$1,880	$17,475	$3,495
10 users	$51,000	$7,650	$24,96	$3,760	$34,950	$6,990
Cost per names user	***Price***	***Annual Maintenance***	***Price***	***Annual Maintenance***	***Price***	***Annual Maintenance***
10 users	$76,500	$7,650	$37,120	$5,560	$61,150	$12,230
20 users	$152,000	$15,300	$74,240	$11,120	$122,300	$24,460
Consulting	$60 to $227 per hour $480 to $1,820 per day		$2,000 per day		$200 to $375 per hour $1,000 to $3,600 per day	
Training	$162.50 per hour $1300 per day		$2,000 per day for up to 12 students		$795 to $2,595 off site per student $4,000 to $12,000 on site for up to 12 students	

Round Table Discussion

During a round table meeting held February 21, 2002 to discuss the three products considered for managing FSA's enterprise architecture, members of the FSA CIO IT Management team identified the following strengths and challenges:

Ptech Enterprise Framework 6.0

Strengths:

- Designed from ground up as an enterprise architecture tool
- Good high level modeling
- Used as a pilot project to manage the ED's enterprise architecture
- Interface and presentation that is more friendly for business users and executives

Challenges:

- Proprietary database and model format may limit integration with other standard FSA products
- Not 508 compliant

Popkin System Architect 2001

Strengths:

- Well established system engineering tool
- Added several enterprise architecture frameworks to make the product more applicable to enterprise architecture
- Strong data modeling capabilities

Challenges:

- Focus is more on system architecture and data modeling instead of enterprise architecture
- Not 508 compliant

Rational Rose Enterprise

Strengths:

- Because FSA owns Rational licenses, it may be easier to do a pilot study of the applicability of the tool to enterprise architecture

Challenges:

- Not designed for use as an enterprise architecture modeling tool
- Not user friendly
- Rigid user interface and design process
- Unattractive model presentation which may discourage business users and others not familiar with UML or Rose symbolic representations
- Poor data modeling capabilities
- Does not tie directly into an enterprise architecture framework
- Not 508 compliant

External Federal Agency Commentary

One of the outcomes of the Round Table meeting was interest in commentary from Ptech Enterprise Framework users in government settings. FSA CIO IT Management team members recognize that there is a large federal effort being expended by agencies to comply with legislative and administrative EA requirements. They hoped to benefit from the learning that others have accumulated in developing EAs in federal agencies.

Below is commentary provided by federal government employees, contractors, and a commercial sector EA developer.

Jim McCall, USPS, 2/25/2002, (202) 268-2815, jmccall2@email.usps.gov

The USPS currently holds 10 Ptech Enterprise Framework licenses. They have been using the tool for over a year and have found the it is effective for developing their EA. Before selecting the Pitch tool , the USPS also considered Popkin System Architect.

In the USPS's implementation, there are several architects developing the EA. The architecture is then exported to static HTML and served to users who need to reference the architecture. Mr. McCall describes the USPS as needing extensive effort in order to develop an EA that can be used to support IT and business decisions.

Upon FSA CIO IT Management team request, Mr. McCall has agreed to demonstrate how he has used Ptech Enterprise Framework to develop the USPS's EA, comment on the development process, and to show how the developed EA is referenced by users.

Ptech Enterprise Framework:	• Found Ptech to be the strongest product for enterprise architecture. • Only product that lets the architect easily expand the framework. • Presentation allows for icons and objects that business users find friendly. • Exports static HTML that can bused by anyone needing to reference the enterprise architecture. Licenses are only required to build the architecture and not necessary to reference the architecture. • Easily link in Microsoft Office documents. Spreadsheet templates can be populated by others and then imported into Enterprise Framework. Can also bring Visio objects into Enterprise Framework. • Phone support has been helpful. • Consulting services were not that robust when they did their initial implementation, but Mr. McCall is under the impression they have strengthened their consulting services. • Ties the models together with shared, underlying data used for different models and presentations.
Popkin System Architect	• Not able to expand the underlying model. • Strong data modeling tool, but does not have the flexibility or presentation as friendly to business users as Ptech Enterprise Framework.
Rational Suite:	• Not designed as a business modeling tool. • Strong application development tool. • Very unfriendly presentation.

Robert Stelfer, Information Dynamics (NASA & FBI contractor), 2/28/2002, (216) 433-8291

Mr. Stelfer has worked as a contractor on NASA's EA and the FBI's EA. At NASA, they have been developing an EA over the past five years. When selecting a tool, NASA conducted a desktop evaluation and found Ptech's product to best meet their requirements.

NASA populated its KnowledgeBase, the database underlying a Ptech Enterprise Framework EA, with information in an evolutionary manner. It is now a substantial data set and serves as the basis for their business, process, information technology, and system architectures. Their EA is drawing components from both the Zachman and FEAF frameworks.

Mr. Stelfer has seen two approaches to EA development. The first is to start small and grow the EA while gaining user buy-in and making decisions about how to tailor a base to the unique needs of the agency. The second approach is a "top down" approach in which the top two or three layers of a base

framework are populated in the beginning of the effort. One risk involved in the "top down" approach is limiting the ability to alter and expand the framework by having the data set established and populated. Another risk in the "top down" approach is discouraging user buy-in. If users are provided a large EA with no management of their expectations and no clear vision of how the EA is to be used, they may either be overwhelmed or will not reference it.. NASA chose to start its effort as a pilot project and grow it over a couple of years. During that time, the agency was prepared users so that the EA would be referenced in appropriate situations.

Ptech Enterprise Framework:	• Robust tool with flexibility in architecture development. • Designed from ground up to be an EA tool. • Never engaged Ptech consultants as they are expensive. • On site training provided by Ptech effectively prepared EA developers to use the tool.
Popkin System Architect	• Framework flexibility is very limited. • Graphics are not as attractive.
Rational Suite:	• Did not consider this tool for EA development.

Curt Mitchell, US Navy Cryptography, 2/26/2002, (240) 373-3064

The US Navy Cryptography agency has been developing an EA based on the C4ISR framework for five years. The first three years of the effort were spent gathering artifacts, establishing standards, developing buy-in, and deciding how to develop and use the EA within the organization. Other critical products of the initial effort was defining how the EA was to be used within the organization and establishing a decision making process. They introduced Ptech Enterprise Framework to the process about a year and a half ago. They did much of the business modeling in BPWIn because of it's ability to strictly enforce rules. They also took great care in establishing the information exchange requirements.

Mr. Mitchell felt as though many of the key decisions need to be made before pouring data into a model, otherwise the model will not provide valid and reliable information to users. Mr. Mitchell also mirrored Mr. Stelfer's recommendation to start small and build the EA over time. This provides the opportunity to show users an EA that is easy to reference. AS the users expectations grow, the EA can grow. Currently the primary delivery vehicle of the architecture to those who reference it is through hard copy, and the secondary delivery vehicle is HTML.

Ptech Enterprise Framework:	• Best graphics of the tools. • More rules enforcement because of sharing underlying data between models. • Cost is higher than Popkin. • Have not used consulting services.
Popkin System Architect	• Not strong in adhering to a framework. • Less expensive. • Graphics not as friendly. • Not strong in rules enforcement.
Rational Suite:	• Did not consider as an EA tool

List of Appedices

Appendix A: Negotiated Price for Ptech Starter Kit

Appendix B: Vendor Demonstration Survey Form

Vendor: <insert vendor name>
<insert date of demonstration>

Your Name:_____

Legend: 1: Does not support function
2: Provides limited support of function
3: Supports function
4: Fully supports function and include additional desirable features

Technical Infrastructure Repository

	Requirement Description	
1	Provide a data repository to store information of individual technology components including the version level.	**1 2 3 4** **Comments:**
2	Provide for a GUI data entry mechanism to add and maintain information in the data repository	**1 2 3 4** **Comments:**
3	Support standard DBMS file types.	**1 2 3 4** **Comments:**
4	Ability to interface with the configuration management information.	**1 2 3 4** **Comments:**
5	Ability to store architecture elements.	**1 2 3 4** **Comments:**

Enterprise Architecture Management

	Requirement Description	
6	Ability to organize individual technology components by business applications.	**1 2 3 4** **Comments:**
7	Web Enable architectures.	**1 2 3 4** **Comments:**
8	Ability to navigate through the as-is and to-be diagrams and dynamically drill-down to the business applications.	**1 2 3 4** **Comments:**
9	Ability to navigate through the various models and dynamically drill-down to its technical infrastructure.	**1 2 3 4** **Comments:**
10	Provide links between business applications, project descriptions, and the technology infrastructure components within the architecture.	**1 2 3 4** **Comments:**
11	Provide links between business strategic goals and the applications.	**1 2 3 4** **Comments:**

	Requirement Description	
12	Ability to construct layered architecture representations that include operational, system and technical perspectives.	**1 2 3 4** **Comments:**
13	Ability to follow SFA Technical Standards.	**1 2 3 4** **Comments:**
14	Ability to link the business strategy to the organizational elements.	**1 2 3 4** **Comments:**
15	Ability to link the organizational and investment management strategy to technology initiatives.	**1 2 3 4** **Comments:**

Documentation and Reporting

	Requirement Description	
16	Retrieval and display of project documentation.	**1 2 3 4** **Comments:**
17	Provide ability to generate standard reports.	**1 2 3 4** **Comments:**
18	Provide ability to generate ad-hoc 'What-if' reports.	**1 2 3 4** **Comments:**
19	Ability to access and download reports and documents.	**1 2 3 4** **Comments:**

General

	Requirement Description	
20	Support standard text file types for content management.	**1 2 3 4** **Comments:**
21	Access as-is and to-be architectures using a web browser.	**1 2 3 4** **Comments:**

	Requirement Description	
22	Login authentication and authorization for maintenance activities.	**1 2 3 4** **Comments:**
23	Ability to provide a web-based user interface.	**1 2 3 4** **Comments:**
24	Ability to provide a graphical user interface.	**1 2 3 4** **Comments:**
25	Ability to import data from other tools or existing models.	**1 2 3 4** **Comments:**
26	Ability to conform to Section 508 Requirements.	**1 2 3 4** **Comments:**
27	Ability to support and monitor element's check-in and checkout.	**1 2 3 4** **Comments:**
28	Ability to control/monitor system security and audit trail.	**1 2 3 4** **Comments:**